

CLEAN VERSION OF ABSTRACT

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A method of traveling wave dielectrophoresis applicable to a suspension of particles in which a first signal at a first frequency and a plurality of different phases is applied to generate a TWD force, and simultaneously a second signal is applied at a second frequency which alters the real or the imaginary part of the dielectrophoretic force on the particles at the first frequency. The second signal essentially alters the levitation height of the particles above the electrode plane, and in doing so changes the range of frequencies over which traveling wave dielectrophoresis occurs. This can be used as a method to replace electrorotation as a means for characterizing the dielectric properties of a particle. When there are two types of particle present, the speed of particle travel may be varied so that one type travels and the other does not, or the types travel at different speeds or in opposite directions to assist particle separation. --